Amendments to the Specification:

Please replace paragraph 21 of the current specification with the following:

Referring to Figs. 1A-1C, a single exemplary MTJ memory cell of an MRAM device is illustrated. The single memory cell comprises a first metal layer 11, a pinned layer 12, a non-magnetic layer 13, a free layer 14, and a second metal layer 15. The MTJ cell portion of the single memory cell comprises the pinned layer 12, the non-magnetic layer 13, and the free layer 14, wherein the non-magnetic layer 13 is sandwiched between the pinned layer 12 and the free layer 14. The pinned layer 12 is in contact with the first metal layer 11. The free layer 14 is in contact with the second metal layer [[12]] 15. The pinned layer 12 and the free layer 14 may be made of ferromagnetic materials, while the non-magnetic layer 13 may be made of an insulating material. In the present embodiment, the non-magnetic layer 13 has a thickness of about 1.5 nm, and the free layer 14 has a thickness of about 20 nm. The pinned layer 12 has a fixed magnetization direction, and the free layer 14 has a freely changeable magnetization direction. The magnetization direction of the free layer 14 indicates stored data, which enables the free layer 14 to serve as a data storage layer. Accordingly, the MTJ cell is capable of storing binary digit data representing "0" and "1". If the magnetization directions of the pinned layer 12 and the free layer 14 are parallel to each other, then the MTJ cell is storing a first binary digit, for example, "0". If the magnetization directions of the pinned layer 12 and the free layer 14 are not parallel, then the MTJ cell is storing a [[first]] second binary digit, for example, "1". The magnetization direction of the free layer 14 changes depending on an externally applied magnetic field.